AMENDMENTS TO THE CLAIMS:

1. (Currently Amended) A magnetic position sensor, comprising:

a magnet having opposite first and second magnetic pole surfaces;

a first pole piece adjoined to said first magnetic pole surface and cooperating with said magnet to provide a first magnetic field;

a second pole piece adjoined to said second magnetic pole surface and cooperating with said magnet to provide a second magnetic field;

a first magnetic flux sensor disposed within said first magnetic field and at least partially positioned between said magnet and a portion of said first pole piece, said first magnetic flux sensor operable to sense varying magnitudes of magnetic flux density and to generate a first output signal representative of a position of said first magnetic flux sensor relative to said first magnetic field; and

a second magnetic flux sensor disposed within said second magnetic field and at least partially positioned between said magnet and a portion of said second pole piece, said second magnetic flux sensor operable to sense varying magnitudes of magnetic flux density and to generate a second output signal representative of a position of said second magnetic flux sensor relative to said second magnetic field.

2. (Original) The magnetic position sensor of claim 1, wherein said first pole piece has a proximal portion adjoined to said first magnetic pole surface and a distal portion positioned adjacent said second magnetic pole surface to define a first air gap area, said first pole piece cooperating with said magnet to provide said first magnetic field adjacent said first air gap area, said second pole piece having a proximal portion adjoined to said second magnetic pole surface and a distal portion positioned adjacent said first magnetic pole surface to define a second air gap area, said second pole piece cooperating with said magnet to provide said second magnetic field adjacent said second air gap area.

3. (Original) The magnetic position sensor of claim 2, wherein said first and second magnetic pole surfaces are substantially planar.

4. (Original) The magnetic position sensor of claim 2, wherein said magnet has a substantially rectangular configuration.

5. (Original) The magnetic position sensor of claim 2, wherein said distal portion of said first pole piece is arranged substantially parallel with said second magnetic pole surface, said distal portion of said second pole piece arranged substantially parallel with said first magnetic pole surface.

6. (Original) The magnetic position sensor of claim 1, wherein said magnet is positioned along a rotational axis, said first output signal being representative of a rotational position of said first magnetic flux sensor relative to said first magnetic field, said second output signal being representative of a rotational position of said second magnetic flux sensor relative to said second magnetic field.

7. (Original) The magnetic position sensor of claim 6, wherein said rotational axis extends through a central portion of said magnet.

8. (Original) The magnetic position sensor of claim 6, wherein said magnet defines a direction of magnetization between said first and second magnetic pole surfaces arranged substantially perpendicular to said rotational axis.

9. (Currently Amended) ~~The magnetic position sensor of claim 1, wherein~~ A magnetic position sensor, comprising:

a magnet having opposite first and second magnetic pole surfaces;

a first pole piece adjoined to said first magnetic pole surface and cooperating with said magnet to provide a first magnetic field, a distal portion of said first pole piece laterally ~~overlaps~~

overlapping at least a portion of said second magnetic pole surface;

a second pole piece adjoined to said second magnetic pole surface and cooperating with said magnet to provide a second magnetic field, a distal portion of said second pole piece laterally overlapping at least a portion of said first magnetic pole surface;

a first magnetic flux sensor disposed within said first magnetic field and operable to sense varying magnitudes of magnetic flux density and to generate a first output signal representative of a position of said first magnetic flux sensor relative to said first magnetic field; and

a second magnetic flux sensor disposed within said second magnetic field and operable to sense varying magnitudes of magnetic flux density and to generate a second output signal representative of a position of said second magnetic flux sensor relative to said second magnetic field.

10. (Original) The magnetic position sensor of claim 9, wherein said first and second magnetic pole surfaces are substantially planar.

11. (Original) The magnetic position sensor of claim 1, wherein each of said first and second pole pieces has an arcuate configuration.

12. (Original) The magnetic position sensor of claim 1, wherein each of said first and second pole pieces at least partially comprises an arc segment.

13. (Original) The magnetic position sensor of claim 12, wherein said arc segments are non-concentric.

14. (Original) The magnetic position sensor of claim 12, wherein each of said first and second pole pieces has a semi-annular configuration.

15. (Original) The magnetic position sensor of claim 1, wherein each of said first and second pole pieces has a U-shaped configuration.

16. (Original) The magnetic position sensor of claim 1, wherein each of said first and second pole pieces has a rectilinear configuration.

17. (Original) The magnetic position sensor of claim 1, wherein said first magnetic field is substantially identical to said second magnetic field.

18. (Original) The magnetic position sensor of claim 1, wherein said first output signal is substantially equal to said second output signal.

19. (Original) The magnetic position sensor of claim 1, wherein said first and second magnetic flux sensors are Hall-effect sensors.

20. (Original) A magnetic position sensor, comprising:

a magnet having opposite first and second magnetic poles;

a first pole piece having a proximal portion positioned adjacent said first magnetic pole and a distal portion positioned adjacent said second magnetic pole to define a first air gap area, said first pole piece cooperating with said magnet to provide a first magnetic field adjacent said first air gap area;

a second pole piece having a proximal portion positioned adjacent said second magnetic pole and a distal portion positioned adjacent said first magnetic pole to define a second air gap area, said second pole piece cooperating with said magnet to provide a second magnetic field adjacent said second air gap area;

a first magnetic flux sensor disposed within said first magnetic field and operable to sense varying magnitudes of magnetic flux density and to generate a first output signal representative of a position of said first magnetic flux sensor relative to said first magnetic field; and

a second magnetic flux sensor disposed within said second magnetic field and operable to sense varying magnitudes of magnetic flux density and to generate a second output signal representative of a position of said second magnetic flux sensor relative to said second magnetic

field.

21. (Original) The magnetic position sensor of claim 20, wherein said magnet is positioned along a rotational axis, said first output signal being representative of a rotational position of said first magnetic flux sensor relative to said first magnetic field, said second output signal being representative of a rotational position of said second magnetic flux sensor relative to said second magnetic field.

22. (Original) The magnetic position sensor of claim 21, wherein said rotational axis extends through a central portion of said magnet.

23. (Original) The magnetic position sensor of claim 21, wherein said magnet defines a direction of magnetization between said first and second magnetic poles arranged substantially perpendicular to said rotational axis.

24. (Original) The magnetic position sensor of claim 20, wherein said magnet has opposite first and second magnetic pole surfaces, said distal portion of said first pole piece laterally overlapping at least a portion of said second magnetic pole surface to define said first air gap area, said distal portion of said second pole piece laterally overlapping at least a portion of said first magnetic pole surface to define said second air gap area.

25. (Original) The magnetic position sensor of claim 24, wherein said first and second magnetic pole surfaces are substantially planar.

26. (Original) The magnetic position sensor of claim 24, wherein said distal portion of said first pole piece is arranged substantially parallel with said second magnetic pole surface, said distal portion of said second pole piece arranged substantially parallel with said first magnetic pole surface.

27. (Original) The magnetic position sensor of claim 20, wherein said magnet has opposite first and second magnetic pole surfaces, said proximal portion of said first pole piece adjoined to said first magnetic pole surface, said proximal portion of said second pole piece adjoined to said second magnetic pole surface.

28. (Original) The magnetic position sensor of claim 20, wherein said first magnetic field is substantially identical to said second magnetic field.

29. (Original) The magnetic position sensor of claim 20, wherein said first output signal is substantially equal to said second output signal.

30. (Currently Amended) A magnetic position sensor, comprising:

a magnet positioned along a rotational axis and polarized in a direction of magnetization arranged substantially perpendicular to said rotational axis;

a first pole piece cooperating with said magnet to provide a first magnetic field at least partially extending across a first air gap positioned between said magnet and a portion of said first pole piece;

a second pole piece cooperating with said magnet to provide a second magnetic field at least partially extending across a second air gap positioned between said magnet and a portion of said second pole piece;

a first magnetic flux sensor disposed within said first magnetic field and operable to sense varying magnitudes of magnetic flux density and to generate a first output signal representative of a rotational position of said first magnetic flux sensor relative to said first magnetic field; and

a second magnetic flux sensor disposed within said second magnetic field and operable to sense varying magnitudes of magnetic flux density and to generate a second output signal representative of a rotational position of said second magnetic flux sensor relative to said second magnetic field.

31. (Original) The magnetic position sensor of claim 30, wherein said rotational axis extends through a central portion of said magnet.

32. (Original) The magnetic position sensor of claim 30, wherein

said magnet has opposite first and second magnetic poles, said first pole piece having a proximal portion positioned adjacent said first magnetic pole and a distal portion positioned adjacent said second magnetic pole to define a first air gap area, said first pole piece cooperating with said magnet to provide said first magnetic field adjacent said first air gap area; and

said second pole piece having a proximal portion positioned adjacent said second magnetic pole and a distal portion positioned adjacent said first magnetic pole to define a second air gap area, said second pole piece cooperating with said magnet to provide said second magnetic field adjacent said second air gap area.

33. (Original) The magnetic position sensor of claim 32, wherein said magnet has opposite first and second magnetic pole surfaces, said distal portion of said first pole piece laterally overlapping at least a portion of said second magnetic pole surface to define said first air gap area, said distal portion of said second pole piece laterally overlapping at least a portion of said first magnetic pole surface to define said second air gap area.

34. (Original) The magnetic position sensor of claim 32, wherein said magnet has opposite first and second magnetic pole surfaces, said distal portion of said first pole piece arranged substantially parallel with said second magnetic pole surface, said distal portion of said second pole piece arranged substantially parallel with said first magnetic pole surface.

35. (Original) The magnetic position sensor of claim 32, wherein said magnet has opposite first and second magnetic pole surfaces, said proximal portion of said first pole piece adjoined to said first magnetic pole surface, said proximal portion of said second pole piece adjoined to said second magnetic pole surface.

36. (Original) The magnetic position sensor of claim 30, wherein each of said first and second pole pieces at least partially comprises an arc segment.

37. (Original) The magnetic position sensor of claim 36, wherein said arc segments are non-concentric.

38. (Original) The magnetic position sensor of claim 30, wherein each of said first and second pole pieces has a U-shaped configuration.

39. (Original) The magnetic position sensor of claim 30, wherein said first magnetic field is substantially identical to said second magnetic field.

40. (Original) The magnetic position sensor of claim 30, wherein said first output signal is substantially equal to said second output signal.